WHAT IS CLAIMED IS:

1. A method for screening a library of monomer domains or multimers comprising monomer domains for binding affinity to multiple ligands, the method comprising

contacting a library of monomer domains or multimers of monomer domains to multiple ligands; and

selecting monomer domains or multimers that bind to at least one of the ligands.

2. The method of claim 1, comprising

i. contacting a library of monomer domains to multiple ligands;

ii. selecting monomer domains that bind to at least one of the ligands;

iii. linking the selected monomer domains to a library of monomer domains to form a library of multimers, each comprising a selected monomer domain and a second monomer domain;

iv. contacting the library of multimers to the multiple ligands to form a plurality of complexes, each complex comprising a multimer and a ligand; and

v. selecting at least one complex.

3. The method of claim 2, the method further comprising

linking the multimers of the selected complexes to a library of monomer domains or multimers to form a second library of multimers, each comprising a selected multimer and at least a third monomer domain;

contacting the second library of multimers to the multiple ligands to form a plurality of second complexes; and

selecting at least one second complex.

4. The method of claim 2, wherein the identity of the ligand and the multimer is determined.

5. The method of claim 1, wherein a library of monomer domains is contacted to multiple ligands.

6. The method of claim 1, wherein a library of multimers is contacted to multiple ligands.

7. The method of claim 1, wherein the multiple ligands are in a mixture.

8. The method of claim 1, wherein the multiple ligands are in an array.

9. The method of claim 1, wherein the multiple ligands are in or on a cell or tissue.

10. The method of claim 1, wherein the multiple ligands are immobilized on a solid support.

11. The method of claim 1, wherein the ligands are polypeptides.

12. The method of claim 12, wherein the polypeptides are expressed on the surface of phage.

13. The method of claim 1, wherein the monomer domain or multimer library is expressed on the surface of phage.

14. The method of claim 1, wherein the monomer domain is a LDL receptor type A monomer domain.

15. The method of claim 1, wherein the monomer domain is an EGF monomer domain.

16. The method of claim 1, wherein the library of multimers is expressed on the surface of phage to form library-expressing phage and the ligands are expressed on the surface of phage to form ligand-expressing phage, and the method comprises

contacting library-expressing phage to the ligand-expressing phage to form ligand-expressing phage/library-expressing phage pairs;

removing ligand-expressing phage that do not bind to library-expressing or removing library-expressing phage that do not bind to ligand-expressing phage; and

selecting the ligand-expressing phage/library-expressing phage pairs.

17. The method of claim 16, further comprising isolating polynucleotides from the phage pairs and amplifying the polynucleotides to produce a polynucleotide hybrid comprising polynucleotides from the ligand-expressing phage and the library-expressing phage.

18. The method of claim 17, comprising isolating polynucleotide hybrids from a plurality of phage pairs, thereby forming a mixture of polynucleotide hybrids.

19. The method of claim 18, comprising

contacting the mixture of hybrid polynucleotides to a cDNA library under conditions to allow for polynucleotide hybridization, thereby hybridizing a hybrid polynucleotide to a cDNA in the cDNA library; and

determining the nucleotide sequence of the hybridized hybrid polynucleotide, thereby identifying a monomer domain that specifically binds to the polypeptide encoded by the cDNA.

20. The method of claim 1, wherein the monomer domain library is expressed on the surface of phage to form library-expressing phage and the ligands are expressed on the surface of phage to form ligand-expressing phage, and the selected complexes comprise a library-expressing phage bound to a ligand-expressing phage and the method comprises:

dividing the selected monomer domains or multimers into a first and a second portion,

linking the monomer domains or multimers of the first portion to a solid surface and contacting a phage-displayed ligand library to the monomer domains or multimers of the first portion to identify target ligand phage that binds to a monomer domain or multimer of the first portion;

infecting phage displaying the monomer domains or multimers of the second portion into bacteria to express the phage; and

contacting the target ligand phage to the expressed phage to form phage pairs comprised of a target ligand phage and a phage displaying a monomer domain or multimer.

21. The method of claim 20, further comprising isolating a polynucleotide from each phage of the phage pair, thereby identifying a multimer or monomer domain that binds to the ligand in the phage pair.

22. The method of claim 23, further comprising amplifying the polynucleotides to produce a polynucleotide hybrid comprising polynucleotides from the target ligand phage and the library phage.

23. The method of claim 20, comprising isolating and amplifying polynucleotide hybrids from a plurality of phage pairs, thereby forming a mixture of polynucleotide hybrids.

24. The method of claim 23, comprising

contacting the mixture of hybrid polynucleotides to a cDNA library under conditions to allow for hybridization, thereby hybridizing a hybrid polynucleotide to a cDNA in the cDNA library; and

determining the nucleotide sequence of the associated hybrid polynucleotide, thereby identifying a monomer domain that specifically binds to the ligand encoded by the cDNA associated cDNA.